CHARGE NUMBER: 1708

PROJECT TITLE: Physical and Chemical Properties of Tobacco

PROJECT LEADER: B. C. LaRoy

PERIOD COVERED: July 1-31, 1980

DATE OF REPORT: August 11, 1980

I. MECHANICAL PROPERTIES OF FILLER (D. A. Full)

A. Instron Simulation of Maker Compression Cycle

Experiments in this area have been postponed by renovations in Room T-427, where special humidity and temperature control equipment is being installed.

B. Coal Strength Measurements Using 100 Hz Sinusoidal Vibration

Two samples of Marlboro type cigarettes having differences in blend components were compared by making 80 individual coal strength measurements on 20 weight-selected cigarettes of each sample, provided by Dr. Lowitz. The sample, designated 'AA Tipped' and 'BB Threshed', were found to have resolvably different coal strength distributions. Modelling them by log-Guassians, the former had a slightly higher mean coal strength (i.e., it took a slightly greater peak acceleration, on the average, to shake the coal off) and a slightly smaller standard deviation (i.e., the required accelerations were not so widely scattered). Based on the modelled parameters, the coal failure rates expected for 30 g's were calculated to be roughtly 0.03% and 0.3%, respectively.

II. TOBACCO LEAF CURLING[1] (J. C. Crump, III and L. Trentham)

As reported in May, a study has been underway to investigate the effect of moisture and heating temperature on the degree of curling of tobacco when it is processed through the Proctor & Swartz dryers at the Richmond and Louisville Stemmerys. The study was initiated to provide assistance to Mr. Karl Jockel of Louisville and Mr. Frank Lipski of Richmond. Their primary concern involves the overall reduction in size, due to curling or shrinkage, of tobacco leaf when subjected to high moisture and temperatures in the Proctor & Swartz Unit after the removal of stems. This shrinkage has the result of increasing the percentage of leaf which falls into smaller sieve sizes. The purpose of the study is to obtain information regarding optimum conditions of temperature and moisture for minimum curling or shrinkage.

The results tabulated in Table I show a definite trend toward more curling of the tobacco at the higher moisture levels. Based on these results, it appears that the optimum conditions of temperature and mositure for minimizing curling are moisture levels below 16.7% OV and temperatures either in the 125°F range or between 200 and 225°F.

2022179843

Source: https://www.industrydocuments.ucsf.edu/docs/mkjm0000

TABLE I - % Reduction in Sample Area After Treatments

	66% RH 13.7% OV	73% RH 16.7% OV	76% RH 17.6% OV	80% RH 21.9% OV	92% RH 40.7% OV
Before Heating	9.2%	11.3%	11.5%	11.3%	11.9%
125°F	13.6%	15.0%	29.2%	23.0%	27.3%
150°F	14.3%	20.3%	25.2%	20.0%	23.3%
175°F	12.6%	17.5%	26.0%	27.0%	34.1%
200°F	12.4%	19.2%	24.2%	23.0%	32.0%
225°F	11.8%	15.3%	21.4%	23.0%	31.7%

2022179844

Source: https://www.industrydocuments.ucsf.edu/docs/mkjm0000

REFERENCES

1. "Tobacco Leaf Curling," J. C. Crump, III and Linda Trentham to Karl Jockel and Frank Lipski.

/jsa

2022179845

Source: https://www.industrydocuments.ucsf.edu/docs/mkjm0000